

Section 5: Reduce Waste—Save Money and Resources



Reducing waste makes good business sense. That's because every pound of waste you generate costs your business money. So it just makes sense that by reducing waste, you'll save your business money.

Reducing waste involves preventing waste by cutting down on the amount or toxicity of waste in the design, manufacture, purchase and use of materials. It is the best method of controlling waste because it creates less waste in the first place.

By making just a few simple changes in the way your business handles its waste, you can save money in the long run. For instance, by simply eliminating paper memos or a layer of shipping material, you will save money on procurement, handling and disposal costs.

Waste reduction benefits the environment, too. It helps conserve natural resources and slows the depletion of valuable landfill space. It also reduces the pollution associated with the manufacture of products. In addition, reducing the amount of hazardous constituents in goods can reduce potential management problems at landfills and incinerators when these items are discarded.

Reducing Waste Benefits Your Business

Reducing waste produces many environmental advantages. But it also offers numerous advantages to your business. These include:

- Economic advantages. Potential economic advantages of waste reduction include reduced waste disposal fees, savings in material and supply costs, revenues from marketing reusable materials and savings from more efficient work practices.
- Enhanced corporate image. Your enhanced corporate image as an environmentally conscious business can attract and maintain customers. Research shows that more and more consumers and businesses consider a firm's environmental record when making purchasing decisions.
- Improved employee morale. Your employees may appreciate your efforts to prevent waste. This heightened morale could increase employee enthusiasm and productivity.
- Compliance with County recycling regulations and goals. The County has set a goal of reducing and recycling 50% of its waste. But recycling alone will not achieve this ambitious goal. Businesses will have to reduce the amount of waste they produce to make the 50% goal a reality.

Your Business Has Many Waste-Reduction Options

Waste-reduction activities include, but are not limited to:

- reusing a product or package in its original form
- increasing the life-span of a product or package
- changing purchasing, management, consumption or waste-generation practices to lower the amount or toxicity of waste generated.
- reducing or eliminating the amount or toxicity of the material used and ultimately disposed

Your business has many options for reducing waste. The more you implement, the more you'll reduce. Try adopting a few at a time. Once you get started, you'll see just how easy it is to integrate waste reduction into your work practices. A detailed list of suggestions is found at the end of this section.

Encourage Your Suppliers To Reduce Waste

Your waste-reduction efforts can reach beyond the four walls of your business. Encourage suppliers to minimize the amount of packaging used to protect their products, or seek new suppliers who offer products with minimal packaging. Work with suppliers to make arrangements for returning shipping materials such as crates, cartons and pallets for reuse.

Preventing Paper Waste

Most likely, paper is one of the largest components of your solid waste stream. There are many ways businesses can use paper more efficiently, including:

- sending messages via electronic mail
- printing fewer copies of reports
- posting memos in a central location
- storing computer documents on disk rather than making hard-copy files
- using smaller fonts to save space
- making note pads from scrap papers

If They Can Do It...

Some businesses have saved thousands of dollars a year by implementing a few simple waste-reduction measures. By cutting down on the amount and/or toxicity of the waste your business generates, you often can save money, increase productivity, attract customers and help protect the environment.

While your program will be tailored to your business' needs, you can learn a great deal from the experiences of these area business.

Axcelis Technologies has had tremendous success reducing waste by reusing office supplies whenever possible. Axcelis diligently saves and reuses non-recyclable packing peanuts. Axcelis's commitment to reusing packing materials not only saves money, but also keeps several hundred cubic feet of packing peanuts from entering the waste stream annually. To reuse packing materials, Axcelis suggests saving Styrofoam peanuts from incoming shipments in a large container until needed again.

Reuse does not just have to occur within your company. Axcelis donates items no longer needed by the company to local charitable organizations. Items such as office supplies, furniture, vehicles and computers are always very much appreciated by those in need. When donating items for reuse, you are not only helping the environment, but you may also be eligible for a money saving tax deduction.

Potomac Electric Power Company (PEPCO) prevents a great deal of unwanted paper from entering the waste stream by striving to use as many paper alternatives as possible. PEPCO's office team has found that email effectively eliminates the need for phone message pads, scrap paper and hand-written memos. Management contributes to the paperless effort by not making unnecessary photocopies of documents for department or company wide distribution. Instead, important memos are posted on a message board that employees know to check on a regular basis.

PEPCO has successfully managed to prevent hundreds of Styrofoam cups, plastic bottles and cans from being thrown away each day. To do this, employees are strongly encouraged to bring their own mugs or cups to fill with their beverage of choice. Many conscientious PEPCO employees also take care to pack waste free lunches by bringing reusable lunch bags and plastic containers.

When your company sets strong environmental values like PEPCO and Axcelis have, employees are often excited to join the effort to reduce, reuse and recycle.

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HERE'S HOW TO DEVELOP YOUR WASTE-REDUCTION EFFORT



Your business already may have adopted some waste-reduction procedures such as reducing paper consumption through the use of electronic mail or making double-sided copies. But there probably are many more steps you can take to reduce waste and save money, ranging from simple alterations in everyday business operations to large-scale initiatives.

Following are step-by-step instructions to get your waste-reduction program started (or expand your existing effort). Get started today—you're sure to see the results almost immediately.

Getting Started

A waste-reduction program is most successful when everyone is aware and involved. When setting up your waste-reduction program, remember to include:

✓ *Top-down support*

As with your recycling program, the success of your waste-reduction effort is greatly enhanced by the support of top management. Top management should endorse your effort at its onset. Once the program is operational, managers should continue their support by endorsing program goals and encouraging employee commitment and participation.

✓ *The waste-reduction team*

Establish a team of employees to help plan, design, implement and maintain your waste-reduction program. The size of the team should be related to the size of your business—a larger business probably will need a larger team than will a five-person business. Be sure to appoint a leader who is knowledgeable and motivated about waste reduction. This person will act as a liaison between management, employees and the waste-reduction team.

You may want to ask your recycling coordinator to serve as the leader. However, you may also look beyond the recycling coordinator, to someone in procurement or an employee with a commitment to the environment or cost reduction, to serve as the team leader. The team's responsibilities will include:

- Working with your business to set the preliminary and long-term goals of the waste-reduction program
- Promoting the program to employees and motivating them to participate
- Monitoring the progress of the program
- Periodically reporting to management about the status of the program
- Gathering and analyzing information relevant to the design and implementation of the program (This is done through a waste assessment, explained next.)

✓ *Goal setting*

Perform a waste assessment to collect data (see instructions below) on your current waste collection and disposal procedures and on the types and amounts of waste produced. From this baseline information, work with management to establish and record realistic, measurable goals for waste reduction. These goals might include collecting revenues from the exchange of materials or reducing inefficiencies in operations.

✓ *Employee involvement*

Keep employees apprised of the program and actively encourage their participation. To emphasize the program's high priority, begin with an announcement from the owner or chief executive officer. The announcement should:

- Introduce employees to waste reduction
- Explain how waste reduction can benefit both the business and the environment
- Outline the design and implementation stages of the program
- Encourage employees to offer suggestions to the team leader

In addition, circulate memos and reminders periodically to maintain employee support and participation. Consider offering incentive awards to employees most committed to waste reduction.

Conducting a Waste Assessment

Once you've established a framework for your waste reduction program, you're ready to conduct a waste assessment. While this step is not necessary to begin reducing waste, the data it produces can provide you with a much greater understanding of the amount and type of waste your business generates.

The data you collect can be used to identify and evaluate potential waste-reduction options, including alternative purchasing practices, reuse, material exchanges and composting. The waste assessment also will enable you to examine current waste reduction practices, and to quantify them.

If you do not have the time or resources to conduct a waste assessment, use industry averages of the amount of waste generated by businesses in your field (industry associations should have this information) to approximate the amount and type of waste your business generates. While this information will not be as accurate as that provided by a waste assessment, it is a good starting point.

Your waste assessment should consist of one or all of these three methods of data collection:

1. Examining facility records

Take a look at the following types of records to gauge your business' waste generation and removal practices: purchasing, inventory, maintenance and operating logs; supply, equipment and raw materials invoices; equipment service contracts; repair invoices; waste hauling and disposal records and contracts; contracts with recycling facilities and records of earned revenues from recycling.

2. Conducting a facility walk-through

Tour your business to observe the activities of different departments, and talk with employees about waste-producing activities and equipment. A walk-through is a relatively quick way to examine your waste-generating practices.

You will see the type and amount of waste produced, identify waste-generating activities and equipment, detect inefficiencies in operations, observe the layout and operations of various departments, assess available space and equipment that could be used for storage, assess current waste reduction efforts and collect other information through discussions with employees.

While the records examination provides you with data, the walk-through is an opportunity to observe the connection between the types of waste generated and the actual waste-generating activities or processes.

3. Performing a waste sort

A waste sort will provide you with more information than a review of records or a walk-through. It involves the collection, sorting and weighing of a representative sample of your business' waste. The goal of the sort is to identify each waste component and calculate its percentage of the waste your business generates. It can focus either on all your waste or it can target specific areas.

Be sure to document all information gained through the assessment. This information will serve as baseline information from which you will develop and evaluate your program.

Selecting, Implementing and Monitoring Waste Reduction Options

The information collected in the waste assessment can be used to list, analyze and choose appropriate waste reduction measures for your business.

Use the findings from the waste assessment to list all the possible waste reduction, composting, materials exchange and purchasing measures you feel would be effective. The list should be compiled based on the goals of your waste reduction program. Then assess the list for its feasibility; determine if the options substantially reduce waste removal costs, reduce purchase costs, have low start-up costs or boost employee morale. You'll need to weigh these criteria based on your own particular goals.

Evaluate which options are most appropriate for your program by considering the benefits and drawbacks of each. After evaluating the options, review the long-term feasibility of the program as a whole. Remember that successful programs can be designed around complementary options that take advantage of their different strengths. For instance, the cost of implementing an expensive option could be offset by savings from another option or its own overall benefit.

Once you've determined which waste reduction measures will work for your business, it's time to implement them. You may want to build your program slowly, implementing a few options at a time. This way, staff are not overwhelmed by changes in procedure, and you'll have an opportunity to identify, assess and solve any problems in the program's early stages.

Be sure that all employees are aware of your waste reduction program, and know their role in it. In addition, update staff as your program evolves. Encourage them to submit new ideas on increasing your program's efficiency.

Evaluate your program on occasion, since waste reduction is a dynamic process. Keep track of its successes, identify new areas for waste reduction, identify areas for improvement in your current program and be sure to provide documentation to the County in your recycling plan and annual report.

Your program should be active and dynamic, with applications to future purchases and procedures as well as existing ones. Resolve to consider waste reduction in all your future business practices.

Business Waste Reduction Techniques

This SORRT document describes programs your business or organization can implement to reduce waste that would otherwise be disposed. It includes proven techniques used by other organizations throughout the County and the country.

Waste Reduction, also known as Source Reduction, includes programs for the reduction of the amount or toxicity of waste including, but not limited to the design, manufacture, purchase and use of materials or products (including packaging) in ways that reduce their amount or toxicity before they enter the waste stream for disposal; it is based on the premise that it makes more sense to prevent waste than manage it. Waste reduction activities include, but are not limited to: reusing a product or package in its original form; increasing the life-span of a product or package; reducing or eliminating the amount of toxicity of the material used and ultimately disposed; or changing purchasing, management, consumption, or waste generation practices to lower the amount or toxicity of waste generated.

(Modified from Reducing Waste in Your Business, Washington State Department of Energy)

FOR WRITING/PRINTING PAPER:

- Make double-sided copies, when possible
- Keep mailing lists current
- Make scratch pads from used paper
- Reuse envelopes or use two-way envelopes
- Circulate memos, documents, periodicals, and reports rather than individual copies
- Use outdated letterhead for in-house memos
- Use voice or electronic mail or put messages on a chalkboard or central bulletin board. Do not print emails unless necessary.
- Buy recycled paper
- Reduce production errors
- Print more words on each page
- Eliminate unnecessary reports
- Reuse manila envelopes
- Where appropriate, use non-toxic fluids and art supplies in your graphic arts department and general use
- Save documents on disks(CDs) instead of making hard copies
- Maintain central files instead of filing in multiple files
- Proof documents on the computer screen before printing
- Donate old magazines and journals to hospitals, clinics, or libraries
- Reduce the amount of advertising mail you receive by writing to:
Direct Marketing Association
Mail Preference Service
Box 643
Carmel, NY 10512
and ask that your business be removed from mailing lists.

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FOR PACKAGING:

- Order merchandise with minimal packaging, in concentrated form, and in bulk
- Ask suppliers to minimize packaging on orders
- Request that deliveries be shipped in reusable returnable containers
- Return, reuse, and repair wooden pallets (see SORRT List)
- Reuse newspaper and shredded paper for packaging
- Reuse foam "peanuts," "bubblewrap," and cardboard boxes, or find someone who can
- Set up a system for returning cardboard boxes and foam "peanuts" to distributors for reuse
- Use reusable boxes for shipping to branch offices, stores, and warehouses
- Where appropriate, consider rebuilding or fixing packaging material (e.g., reels, wooden pallets)

FOR EQUIPMENT:

- Consider renting equipment that is used occasionally
- Consider using repaired or remanufactured office equipment (computers, telephones)
- Invest in equipment that facilitates waste reduction, where feasible, such as:
 - high quality, durable, repairable equipment
 - copiers that make two-sided copies
- Reclaim usable parts from old equipment
- Rotate tires on company vehicles on a regular basis to prolong tire life. Keep tires properly inflated
- Find uses for worn out tires (e.g., landscaping, swings)
- Institute maintenance practices to prolong the use of copiers, computers, and other equipment
- Consider using rechargeable batteries
- Consider installing reusable furnace and air conditioner filters
- Recharge or rebuild fax and printer cartridges

Sell or give old furniture and equipment to employees, or donate it to a local charitable organization; the Washington area has many charitable organizations that are in need of office furniture (see SORRT List of Organizations Offering Reuse Opportunities)

FOR LANDSCAPING/ORGANICS:

- Use a mulching lawnmower (time savings should reduce cost of lawn maintenance and reduce need for fertilizers)
- Compost grass clippings and leaves or request your landscape contractor to compost these items
- Use compost as a top dressing or topsoil amendment and request the landscape contractor to use it as well
- If unable to compost onsite, ensure yard trimmings (leaves, grass, and brush) are sent to a composting facility (Montgomery County offers reduced tip fee for clean loads of yard trim at its recycling center)
- Choose a landscape design that needs low maintenance
- Leave grass clippings on lawn

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FOR PURCHASING:

Substitute less toxic or non-toxic materials for toxic materials (i.e., some inks, paints, cleaning solvents)

- Where appropriate, use products which promote waste reduction (durable, concentrated, recyclable, reusable, high quality)
- Order supplies by voice mail or electronic mail
- Buy products that can be accepted at a local recycling center
- Consider using optical scanners, which give more details about inventory, allowing more precise ordering
- Where appropriate, order supplies in bulk to reduce excess packaging
- Avoid ordering excess supplies that will never be used – maintain inventory control

FOR OVER-STOCKED, EXCHANGEABLE ITEMS:

- Donate surplus produce and past-pull-date perishables to food banks, if still edible (check with food banks first)
- Make arrangements to donate or exchange surplus and reusable waste items
- Set up an area in your business for employees to exchange unused items
- Donate used and surplus building and construction material to the County's *Don't Dump Donate* program

FOR FOOD AND PERSONAL SERVICE AND EMPLOYEE LOUNGES:

- Consider using durable towels, tablecloths, napkins, dishes, flatware, cups, and glasses
- Consider using cloth roll towels, hot air dryers, or large paper rolls in restrooms
- Offer smaller portions (e.g., child's menu) to reduce food scraps
- Use unbleached coffee filters
- Encourage customers to take home extra food
- Arrange to donate leftover food to charities or food programs
- Buy sugar and cream in bulk and use reusable containers instead of packets

IN RETAIL AND WHOLESALE:

Teach your customers about the importance of reducing waste. Effective tools for getting across the message include: promotional campaigns, brochures and newsletters (remember to use recycled paper), banners, newspaper advertisements, product displays, special store signs and labels to promote products that are refillable, reusable and recyclable.

Encourage reuse of shopping bags by offering customers the choice of buying their own bag, complimenting customers who reuse bags, or providing a financial incentive for reuse.

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Offer customers a rebate or price cut when they reuse grocery bags, containers, mugs, or cups for refills.

Provide a choice of products that include products that can be recycled locally and are made of recycled fiber or material.

Offer customers waste-reducing choices, such as:

- items in bulk or concentrate
- solar-powered items, such as watches, calculators, and flashlights
- rechargeable batteries
- razors with replaceable blades
- durable merchandise
- repairable merchandise
- returnable bottles
- Encourage the return of metal hangers at the dry cleaners

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(Smart Organizations Reduce and Recycle Tons) Program

REDUCING AND RECYCLING YARD TRIMMINGS



When developing a plan to properly reduce and recycle yard trimmings (i.e., yard waste: leaves, grass clippings, brush, and other plant materials), consider implementing the following, preferred management hierarchy:

Reduce Waste Generation

Slow down the growth rate – especially useful with managing grass clippings. Reducing the amount of fertilizer applied will reduce the amount of foliar growth and clippings. By grasscycling – leaving fine clippings on the lawn areas – it is easy and economical to reduce nutrient application since the clippings serve as a nutrient source. Also, selecting slow-release fertilizers (sulfur-coated urea, etc.) will help develop long-term plant and root vigor while avoiding the explosive growth rate of quick-release fertilizers. Substituting compost as an organic topdressing also provides primary and micro-nutrients to turf areas. Lastly, check with your supplier or local dealer for more information regarding new, slower-growing hybrids and the possibility of employing hormonal growth regulators.

Select perennial or permanent plant materials

– many parks and public gardens now choose to install perennial plant materials in beds and borders, rather than replacing annuals from season to season. Perennial plantings incur lower maintenance costs, provide long-term savings on plant materials, produce less waste, provide better drought and disease resistance, while also responding to new design preferences – massing ornamental grasses, clumping native species, and so on.

Use alternatives in landscape design

– developing mulch islands, expanding natural plantings to connect existing, scattered stands of trees, establishing large natural areas to replace turf, or using a variety of ground covers instead of grass also helps to reduce the volume of landscape trimmings generated. Sites employing such alternatives have seen reduced long-term maintenance efforts, improved natural habitat and scenic value, reduced energy costs for heating and cooling – where conservation plantings are emphasized – and reduced costs for plant replacement and feeding. These sites also serve as end-users of shredded leaves and brush, and "absorb" leaves which can simply be blown off the turf into these wooded, natural areas.



Recycle Materials On-site

Grasscycling – mulching clippings back into lawns and turf areas is clearly the most cost effective measure in reducing waste, while deriving a tangible value in the form of free fertilizers and organic soil amendments.



Many firms traditionally have grass clippings collected and hauled away for recycling or disposal. Those clippings, however, represent a considerable nutrient value, with over 50 pounds of nitrogen, 18 pounds of phosphorous, and over 45 pounds of potassium in a single ton of freshly-cut grass, which might have been returned to the soil at no extra cost to ensure continued turf vigor. Instead, those same clippings are often collected, which can take 40-50 percent of the time spent mowing (making that labor twice as expensive as necessary), or transporting to a transfer station/recycling center (more time, more expense – including tipping fees).

Mulching – use fallen leaves, pine straw, and woody landscape trimmings to enrich the landscape both aesthetically and environmentally, while reducing the need for purchased mulches and soil amendments, such as peat moss.

Obviously, heavily-treed landscapes produce large amounts of leaves.

Typical management practices have generally involved the use of high-decibel leaf blowers and hours - sometimes days - of labor to corral those leaves for collection and costly removal. Several less expensive solutions present themselves:

Mower Mulching – the process of mulching thin layers of leaves directly into the soil over turf areas using mowing equipment. Rather than collecting leaves from lawn areas, the leaves are shredded by the mower's blades and returned to the soil to add valuable minerals and organic matter.

Shredder-Mulching – rather than simply disposing of collected leaves, those leaves could be processed with one of the numerous shredding or grinding machines available for long- or short-term rental, reduced to a fraction of their original size, and then applied several inches deep as a mulch in planting beds or around trees, shrubs, and foundation plantings.

Chipping-Shredding – often equipment suitable for shredding leaves can be used to chip brush, fallen limbs, and other woody prunings into either coarse or finely shredded wood mulch, which can then be used for pathways in natural areas, tot lots, or around trees and shrubs. Aging wood chips in a pile for six to twelve months will produce a darker, richer looking mulch and allow it to be used safely around tender herbaceous plants.

Composting – using materials collected from your grounds, such as shredded or whole leaves, grass clippings, weeds, discarded annuals, or trimmed flowers and hedges, a site can produce an unparalleled soil amendment, turf topdressing, and mulch which can help reduce or eliminate fertilizer, herbicide and pesticide applications. Composting also eliminates disposal costs and recycles landscape wastes into landscape resources.

Composting, even on a large scale, seldom requires more than access to a tractor-mounted front end loader and a suitable processing area.

Smaller institutions, such as colleges, schools, public gardens, parks, and churches, can often operate a composting system reusing old wooden pallets assembled in bin fashion.

Using compost as a top-dressing on turf areas to rejuvenate soils and improve lawn health is becoming a standard practice for many golf courses and athletic fields, where environmental stresses often exceed those of corporate facilities. And when used as a mulch, compost provides essential nutrients while providing superior natural weed and disease suppression.



Take Materials to an Approved Composting Facility

Various jurisdictions in the metropolitan area allow for the operation of permitted yard trimming composting facilities. Some large-scale commercial facilities accept materials for a fee and then process the materials into a finished compost product for re-sale. Other smaller facilities, often associated with farms or nurseries, also allow landscapers, in some instances, to back-haul finished materials for use as a soil conditioner.

Under no circumstances are yard trimming materials to be "dumped" at non-permitted sites; doing so constitutes illegal dumping.

Use the County Recycling Center

Materials which cannot be processed on-site can be brought to the Montgomery County Transfer Station/Recycling Center at Shady Grove Road and Route 355. As of July 1, 2005, there is a \$36 per ton tipping fee for recycling appropriate landscaping materials, and facility users must be registered. Registration forms are available either at the scale house or by calling 301-840-2370. The following procedures must be observed when recycling landscape trimmings:

Keep brush separate from other materials

Brush is processed through a tub grinder into shredded mulch which is available **for free** in unlimited quantities, both at the Recycling Center and at other satellite locations. Call 301-840-2370 for more information.

Leaves, grass, and other materials should be clean: no rocks, plastic, wood, metal, construction debris, or soil. Sod and tender perennial rootballs should have as much dirt removed as possible.

Stumps and logs are not accepted at the Recycling Center

Materials from out-of-county cannot be imported to the Montgomery County Recycling Facility

For information regarding grasscycling, mulching, composting, landscape alteration, or the yard trim recycling program, contact Joe Keyser at the Department of Environmental Protection at (240) 777-7700.

For tours of the Recycling Center, call 301-417-1433.

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